

REMARKS

Claims 35-47 and 49-52 are pending. Claims 1-34, 48, and 54 have been canceled. Claims 35 and 49 have been amended. These amendments introduce no new matter and do not require any additional searching. Support for these amendments is found, for example at paragraph [0053] of the specification. Reconsideration of the pending claims in view of these amendments and remarks is respectfully requested.

The Pending Claims are Patentable Over the Cited Art

Claims 35-47, 49-52, and 54 stand rejected under 35 U.S.C. 103 as allegedly being unpatentable over Higgins (claim 54) or Higgins in view of Cardwell.

While Applicants respectfully disagree with the rejection of claim 54, solely for the purposes of advancing the prosecution of the pending case, Applicants have canceled this claim. Applicants reserve the right to pursue the subject matter of this claim in a subsequent application.

Regarding the remaining claims, the Examiner has alleged that it would be obvious to one of ordinary skill in the art to combine the teachings of Higgins with Cardwell to achieve the claimed invention. Applicants respectfully disagree with the Examiner regarding the removal of HCl from the solutions. However, solely to advance the present application to issuance and without addressing or acquiescing to the Examiner's position regarding the pH of the method taught in the prior art, Applicants have amended the pending claims to recite an additional feature not taught in the cited art. Specifically, Applicants note that in the presently claimed invention, the use of the QL reagent occurs with the solution being heated to a temperature in the range of about 180°F to about 230 °F.

Neither reference teaches or suggests reactions for extracting manganese to be conducted in this temperature range. In fact, the Higgins reference specifically notes that the reaction taught in that patent is conducted at "a temperature in the range of about 70 degrees C. to 90 degrees C." Higgins at col. 3, lines 40 to 41. Caldwell, which was cited to support the use of QL reagents for the removal of impurities from a manganese containing solution uses temperatures well outside of

those recited in the pending claims. For example, Caldwell discusses the formation of metal chlorides at temperatures from about 200° to about 400° C (col. 6, lines 53-59). Caldwell also discusses a number of other purification steps, including the separation of ferric chloride from other metal chlorides which are performed at temperatures “at least about 200° C” (col. 7, lines 16-18; col. 8, lines 12-17).

One of ordinary skill in the art would not have been motivated to use amines to purify ferric chloride from solutions at the claimed temperature range, for a number of reasons, including additional costs. The Caldwell disclosure is directed to separating metal constituents from ocean floor nodules. Doing so involves mechanically crushing the nodules and expending energy to create elevated temperatures for subsequent purification steps. One of ordinary skill in the art would not have been motivated to reduce the temperatures of the reactions taught by Caldwell because to do so would have needlessly increased the cost of performing the purification at a commercially relevant price. (See Caldwell, col. 2, line 62 to col. 3, line 2 discussing market forces). Moreover, the teachings of the reference time and again call for elevated temperatures. Reducing reaction temperatures to achieve the claimed invention would constitute modifying the cited reference in such a manner as to make it

The present rejection should be withdrawn because Higgins and Caldwell fail to teach or suggest all the limitations of the pending claims. Moreover, there is no motivation to combine or modify the cited references to achieve the claimed invention. As such, the pending claims should be advanced to issuance.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 144092000401. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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